

# mem

MARINE ENGINEERS MESSENGER

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# MEM

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## Telegraph

While the commercial benefits of installing exhaust gas cleaning technologies have yet to be fully assessed amidst low bunker prices and the continued focus on LNG as a marine fuel, the successful retrofitting of Yara Marine Technologies' exhaust scrubber aboard six Brittany Ferries vessels points to a technology that has come on leaps and bounds since the first prototype installation in 1991.

Nevertheless, despite technical advancement, the wider take-up of marine scrubbers remains slow, due in part to the size and weight of the technology and the time and complexity of a retrofit installation, which has on occasion resulted in shipboard fires, mainly due to the confined spaces in which welders have to work.

CAPEX and the cost of drydocking for extensive periods to complete the installation and commissioning processes are other deterrents, as is the confusion over the performance of the different technologies. There are open-loop (seawater) scrubbers, closed-loop (seawater/chemical) scrubbers, dry scrubbers and hybrid scrubbers. And if that wasn't enough to deal with, there are concerns about the environmental impact of contaminated washwaters being discharged overboard.

The successful installation of Yara's Green Tech Marine scrubbers and MAN Diesel and Turbo's EGR technology, however, does suggest that a lot of these these obstacles are quickly being hurdled. Certainly, system footprints have been reduced and installation is becoming less complex with the experience gained from each retrofit, as is evident from the Brittany Ferries' installations. There are also IMO regulations in place now governing the pH, NO<sub>x</sub> and turbidity content of discharge waters. And while CAPEX may remain an important factor, supply and demand economics, along with market competition in the sector will eventually drive prices down.

Whether shipowners invest in scrubber technologies or opt for low-sulphur distillates (assuming availability), they must bear in mind though that the life expectancy of both these emissions reducing concepts will merely fill a technological gap between the shipping industry's inevitable transition from Heavy Fuel Oil to LNG. And how long that will take is open to conjecture.



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## **GAS TURBINES**

### **HHI, LR AND GE COLLABORATE ON COGES CONTAINERSHIP DESIGN**

Shipbuilder Hyundai Heavy Industries, turbine manufacturer General Electric and classification society Lloyd's Register have banded together to design a gas turbine-powered, electrically-driven 14,000TEU containership.

The project further develops HHI and LR's work on safe container loading and continues GE's collaboration with LR on the COGES (Combined Gas turbine, Electric and Steam) propulsion and power system configuration.

While the gas turbine is a proven technology, having been used in naval ships and high speed craft, as well some passengerships, the gas turbine does not have any references in the commercial cargo fleet. This project aims to develop a design to safely maximise the potential operational benefits of gas turbine systems for cargo vessels, in particular large containerships.

It is expected the project, technically led by LR's Busan Technical Support Office, will result in a future containership capable of greater efficiency and flexibility from an increased container intake and an environmentally-friendly dual-fuel COGES arrangement.

Lloyd's Register and GE have worked together on a number of joint development projects related to gas turbines. Notably on a design for what could be the world's first gas turbine-powered 174,000m<sup>3</sup> LNG carrier, for which LR Approval in Principle (AiP) was issued in December 2015.

## **EMISSIONS TECHNOLOGY**

### **WORLD'S FIRST IMO-CERTIFIED EGR ORDERED FOR TANKER NEWBUILDS**

The two 158,000m<sup>3</sup> crude-oil tankers Hyundai Heavy Industries is building for Turkey's Ditas Shipping will be the first vessels to meet IMO Tier III emission restrictions within existing North American NOx Emission Control Areas (NECAs) and the United States Caribbean Sea NECA.

While there are already IMO Tier III-compliant vessels in operation, they will be the first Suezmax newbuildings to feature MAN B&W 6G70ME-C9.5 two-stroke engines and integrated Exhaust Gas Recirculation (EGR) systems, on ships whose keels are laid after January 2016.

MAN Diesel & Turbo originally developed, designed, and manufactured the first EGR system for a two-stroke marine diesel engine for operation on a container vessel in service in 2010.

The system works by drawing in part of the exhaust gas through a scrubber, cooler, and water mist catcher by suction created from an electrically driven, specially designed blower. The blower raises the pressure of the exhaust gas, which is then mixed with the charge air via a unique charge air pipe, before entering the main-engine coolers.

Within the scrubber, the exhaust gas is washed with water, which consequently becomes acidic depending on the sulphur from the fuel in the exhaust gas dissolving in the water. Sodium hydroxide dosing is therefore required to neutralise the acidic scrubber water. In addition, the scrubber washes out particulate matter (PM) that becomes suspended in the scrubber water, and it is therefore necessary to have a water treatment system (WTS) to remove PM from the scrubber water, and discharge the PM as concentrated sludge into the sludge tank on the vessel. The WTS is designed for cleaning the scrubber water to such an extent that it can be discharged into open sea.

A fully automated control system provides for easy operation for the ship's crew and correct and swift reactions to engine load variations.

Following efficiency optimisation trends in the market, MAN Diesel & Turbo says it has evaluated the possibility of using even larger propellers and thereby engines with even lower speeds for the propulsion of tankers and bulk carriers.

Such vessels may be more compatible with propellers with larger diameters than designs so far used, and therefore able to facilitate higher efficiencies following adaptation of the aft-hull design to accommodate a larger propeller. It is estimated that such updated aft-ship designs with the G-series of engines offer potential fuel-consumption savings of some 4-7%, with a similar reduction in CO<sub>2</sub> emissions.



## IMABARI FITS JAPAN'S FIRST SCRUBBER

Imabari Shipbuilding has become Japan's first shipyard to successfully install an exhaust gas circulation system (EGCS) onto a bulk carrier.

The Fuji Electric SOx Scrubber (right), installed on the 84,000dwt *Nadeshiko* as part of the joint research support project with ClassNK, is a compact "cyclone-type system" that can be installed without changing the dimensions of the ship's superstructure. Operational data will now be analysed and verification tests performed on the system.

Oxides of Sulphur (SOx) emissions are currently limited to 0.1% in Emission Control Areas (ECAs). For outside ECAs, the regulation will be tightened to 0.5% in 2020 or 2025.

## BRITTANY FERRIES SCRUB UP WELL



Brittany Ferries has completed the retrofitting of exhaust gas scrubbers to six of its vessels as part of £60 million project to lessen the impact operations have on the marine environment.

Yara Marine Technologies (formerly Green Tech Marine) supplied in-line scrubbers to the cross-Channel ferries *Normandie* (Pictured), *Cap Finistère*, *Barfleur*, *Mont St Michel*, *Armorique* and *Pont-Aven*, taking 18 months to install and commission the units.

*Pont-Aven*, the last ship to return to service following retrofit at Poland's Gdansk shipyard in Poland, is now operating from between the UK and France and Spain, during which the vessel's scrubbers will be fine-tuned.

*Pont-Aven* followed *Armorique*, which returned to service following a scrubber retrofit at Spain's Astander shipyard. Together, these investment in these two ships cost about £30 million. Scrubbers were fitted to *Mont St Michel*, *Normandie*, *Cap Finistère* and *Barfleur* last year.

Replacing the vessels' existing silencer, the scrubbers can operate in dry mode or as open loop and closed loop units depending on the operator's requirement, stripping sulphur and particulates from exhaust gas emissions.

"The scrubbers are just one of the many ways that we are trying to lessen our environmental impact as a company and we support several organisations that promote conservation work and environmental research," said the operator.

Brittany Ferries, still largely owned by a collective of French farmers who launched the company more than 40 years ago, is celebrating 30 years of service on the Portsmouth to Caen route this year. Operating year-round with three sailings a day, the route takes 38% of our passenger traffic and around 55% of all our freight traffic and is now largely sulphur-free.

## PROPULSION

### VOITH SCHNEIDER PROPULSION FOR NEW NOVATUG TUGS

The two Carousel RAVE Tugs (CRT) Damen Shipyards Group is building for Multiraship subsidiary Novatug will each feature a pair of 32RV5 EC/250 Voith Schneider Propellers, arranged in-line to allow for a slender, more efficient hull form.

The 32m tugs, due for delivery in 2017, are characterised by a towing winch on a ring, which freely rotates around the tug's deckhouse – a unit referred to as the carousel towing system. This system eliminates the risk of capsizing under a tow load.

The optimised hull form and use of Voith Schneider propulsion is claimed to result in lower fuel consumption and fewer emissions. According to the manufacturer, the CRT can carry out manoeuvres



unable to be performed by any other tugboat concept. The yaw angles of the tug are virtually limitless.

Arranged in-line, the VSPs allow for greater precision control of the tug heading under all possible operating conditions.

Using Computational Fluid Dynamics (CFD), the Voith ship simulator and model testing, extensive optimisation work was performed on the design to determine the optimum position of the propellers relative to the carousel system as well as the optimum size and position of the skeg. The result, says Voith, is a “well balanced tug that is stable and easy to handle in all sea and weather conditions”.

Providing power are two ABC main engines each delivering 2550kW at 1000rev/min through Renk gears to provide a service speed of 14kts. Bollard pull is 70t.

## PROPELLERS

### TMS TANKERS PROVIDES REFERENCE FOR ENERGOPROFIN PROPELLERS

Greek shipowner TMS Tankers has selected Wärtsilä fixed pitch propellers (FPPs) for its new vessels under construction in China. The order was placed with Wärtsilä CME Zhenjiang Propeller Co (WCME), in December 2015.

The contract covers the propellers for four Aframax tankers under construction at the Hantong Ship Heavy Industry yard. The propellers, fitted with the company’s EnergoProFin propeller cap and fins, are claimed to generate fuel savings of up to five per cent.

“Efficiency and quality are the basic reasons behind the success of Wärtsilä FPPs, especially when supplemented by the EnergoProFin. We place great value on being selected by this large and successful shipping company, which is an endorsement of Wärtsilä’s propeller technology and evidence that fuel efficiency is still of great importance, even with the current low fuel prices,” said Arto Lehtinen, Vice President, Propulsion, Wärtsilä Marine Solutions.

The propeller design has been optimised for minimum levels of noise and vibration, while the EnergoProFin is cited as improving performance by weakening the hub vortex. It is tailored to the specifics of the individual propeller, and can be installed quickly and easily. The resulting improvements to overall fuel efficiency mean that the payback time can be as short as a few months only, said Wärtsilä.



## DRIVES

### BAKKER SLIEDRECHT DRIVES WORLD’S LARGEST CUTTER SUCTION DREDGER

Bakker Sliedrecht is working on the drive systems and auxiliary switchboards for JDN 8069, the world’s largest cutter suction dredger being built for Jan De Nul Group.

The Dutch electrical systems integrator is contracted to engineer, supply and commission four high voltage drive systems comprising two 8500 kW inboard pump drives, an 8500kW submerged pump drive, and an 8500kW cutter/propulsion drive. One drive system will power both the cutter and propulsion since both applications are never used at the same time, thus saving space onboard.

Four additional drive systems are also being supplied by Bakker Sliedrecht to power winches, pumps, and other auxiliaries. The scope of supply consists of multiple water-jacket-cooled electric motors, which will all undergo a heat run test before installation to increase reliability. Both the high voltage and low voltage systems will be dampened to avoid excessive vibration.

All drive systems and switchboards are currently undergoing Factory Acceptance Tests (FAT), after which both the drive systems and the switchboards will be shipped to Jan De Nul Group for installation in Croatia.

JDN 8069 is due to be operational in 2017.

## BALLAST WATER

### CARISBROOKE AWARDS OPTIMARIN ITS LARGEST CONTRACT



The contract Optimarin signed with Carisbrooke last week could end up being the Norwegian manufacturer's biggest ever, if ballast water treatment system retrofits are undertaken across the UK-based shipowner's fleet of 46 bulk carriers and multipurpose vessels.

"This is a huge development for us," said Optimarin CEO Tore Andersen. "Our retrofit expertise was absolutely key here. We've been 100% focused on ballast water treatment since our formation in 1994 and, with the ratification of the IMO's Ballast

Water Convention now imminent, forward-thinking shipowners are signing up for fleet agreements. Carisbrooke was quick to see the advantages of doing so, and we're delighted to add a name of their calibre to our growing client list."

Optimarin's upcoming USCG approval, on schedule for later this year, played a decisive part in securing the deal, with a number of Carisbrooke vessels trading in US waters. This certification, in conjunction with the IMO ratification, is proving to be an important factor in accelerating OBS sales, with recent orders confirmed with Atlantis Tankers (ten units) and Sinopacific Shipbuilding Group (nine).

Carisbrooke is now assessing its fleet with the prospect of commencing installations in 2017. The contracted vessels range in size from 5000 to 20,000dwt.

Martin Henry, Fleet Technical Director, Carisbrooke, said: "[Optimarin's] expertise and the modular nature of the system will be essential when it comes to retrofitting vessels with small engine rooms and very limited available space.

"We believe this to be an excellent UV system, at a very competitive price, from a supplier with a genuine maritime heritage and understanding. This gives us complete peace of mind for future regulatory compliance, technical dependability and, importantly for Carisbrooke, environmentally responsible operations."

Other shipowners that have opted for the Optimarin solution include Saga Shipholding, MOL, Grieg Shipping Group, Fisherman's Finest, Gulf Offshore, Farstad Shipping, NYK, Nor Line, and Evergreen Marine Corp, amongst others. The system is fully approved by IMO and certified through DNV GL, Lloyd's, Bureau Veritas, MLIT Japan, and American Bureau of Shipping.

## CONTROL & MONITORING

### MINERVA MONITORING THE 'SMART' WAY

The efficiency of Minerva Marine's chemical tankers *Minerva Leo* and *Minerva Tychi* is being monitored using BMT Smart's performance monitoring system.

The system combines data collected automatically onboard, from the navigation and automation systems, with data only available on shore, such as accurate Hindcast Metocean data. Through BMT's web-based SMARTFLEET application the Minerva Marine team can assess and gain insight into the factors impacting the vessels' performance. The system also allows shore based personnel to make decisions as to when intervention may be required to help restore performance.



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# Priceless

CLARIMAR MF

ACO Marine's new Clarimar MF advanced black and grey wastewater treatment system is the merchant shipping industry's most effective solution for meeting IMO MEPC 227(64) rules, which entered into force in January 2016.

Small and economical with the lowest running costs of any sewage treatment plant, the Clarimar MF range incorporates the ACO patented 'Bio-Sword' technology.



**ACO Marine, s.r.o.**  
Mark Beavis - Managing Director  
Nádražní 72, CZ -15000 Praha 5,  
Czech Republic  
Tel: +420 257 217 990  
Fax: +420 257 310 718  
Email: mbeavis@acomarine.com

Maria Tsobanoglou, Newbuildings and S&P Senior Engineer at Minerva Marine, said: "BMT has been able to offer a comprehensive package that can fully support our efforts to monitor daily operational costs and optimise fleet performance. The hardware seamlessly integrates with different on-board automation systems, synchronising easily with the on-board database.

"BMT provides flexibility in data display and analysis, with trends and live feedback, making it easier for us to manage our maintenance strategies and quantify the results of an energy saving solution, or calculate the payback period of a particular investment. By helping to enhance our performance profile, BMT's system provides us with a competitive advantage in the chartering market."

BMT SMART's Technical Sales Consultant Simon Hayes said: "We have worked closely with the team at Minerva Marine to ensure the system is fit for purpose, providing recommendations on the system configurations and delivering a solution that helps to optimise and manage vessel performance.

BMT has further strengthened its relationship with Minerva with an additional order for its Shaft Power Torque Meter and Vessel Performance Monitoring Systems for two new Suezmax tankers, Minerva Kalypso and Minerva Evropi.

## FIFTY PER CENT OFF DNV GL'S ECO INSIGHT MODULE

DNV GL is offering a 50% discount on subscriptions to its fleet performance management solution, ECO Insight Environmental as an incentive for companies to improve their environmental performance under the voluntary Environmental Ship Index (ESI).

"The ECO Insight portal provides ESI reports and scores as an automated service, without creating additional work for the crew or onshore staff and therefore helps shipping companies to more easily participate in projects such as the ESI. Supporting ESI customers in complying with reporting requirements both helps their bottom line and improves the shipping industry's environmental footprint," said Torsten Büssow, Head of Fleet Performance Management at DNV GL - Maritime. ECO Insight can also help companies which have not yet achieved the targets they need to receive ESI incentives. "Environmental reporting should be an automatic delivery of any good fleet performance management solution," he adds.

ECO Insight has attracted some 700 vessels since its launch in January 2015, making it one of the leading performance solutions on the market. It helps shipping companies to better understand and correct voyage performance, hull and propeller performance, engine and machinery

systems, and fuel quality. It automatically produces environmental key performance indicators and reports from the system on emissions or disposals and supports schemes like ESI, Clean Cargo Working Group (CCWG), Clean Shipping Index (CSI) and the upcoming EU Monitoring, Reporting, Verification (MRV).

## **CARGO CONTAINMENT**

### **FIRE RETARDANT INSULATION FOR LPG CARGO TANKS**

A novel flame-retardant insulation for LPG cargo tanks has been introduced by Hyundai Heavy Industries in a development that could render polyurethane foam insulation systems obsolete.

Polyurethane is commonly used to insulate LPG cargo tank but it is vulnerable to fire spread once it is exposed to a fire source, such as shipyards where there is a high chance of a fire outbreak that might result in serious accidents and delay in the shipbuilding process.

To reduce the fire risks involved in building LPG vessels, HHI, in cooperation with insulation system manufacturers, established guidelines for "Fire Safety Evaluation Techniques" and "Standards for Flame Retardancy", after which they joined forces to revise the formulation of polyurethane to make it more flame resistant and develop a new insulation spray system.

Shin Hyun-soo, HHI's Chief Technology Officer, said: "During the 14-month development period, we came to a belief that the high flame-retarding insulation for LPG cargo tanks will play a key role not only in enhancing the safety of workers in the shipyards, but also in sharpening our competitiveness in winning LPG carrier orders."

The new insulation does not trigger fire spread even when it is in contact with fire sources and, should it catch fire, is self-extinguishing within four minutes.

## **DECK MACHINERY**

### **HUGE HATLAPA STERN ROLLERS FOR NEW MAERSK AHTS**

The six new anchor handlers Kleven Shipyard is building for Maersk Supply Service will each feature a MacGregor deck handling package consisting of products from its Triplex and Hatlapa portfolios.

The contract will see MacGregor deliver to each vessel Triplex 42 multi-deck handlers, shark jaws and towing pins as well as Hatlapa stern rollers with a safe working load of 1250t.

The 95m AHTS vessels will be built at Kleven's two shipyards in Norway, Kleven Verft and Myklebust Verft, to a SALT 200-design. Ships are due to be delivered from the end of 2016 to mid-2017. The MacGregor package is scheduled for delivery to the yards between the last quarter of 2015 and the second quarter of 2017. The contract also includes options to equip an additional four vessels.

MacGregor has also confirmed an order to deliver hatch covers, cranes, deck machinery and steering gear to two new 25,600dwt dual-fuelled handysize bulk carriers for Finnish owner ESL Shipping.

The ice-class vessels, the first to be built to new classification society rules introduced January 2016, have been designed to set new standards in efficiency and environmental performance and introduce liquefied natural gas-powered bulkers to the market.

For each vessel MacGregor will deliver three K3030-4 mechanical grab cargo cranes with a safe working load of 30t at 30m outreach, design and key components package for multi folding-type hatch covers (6+6), electrically-driven Hatlapa deck machinery and Porsgrunn steering gear.

The 160m vessels are being built to B.Delta26LNG-design developed in close cooperation between Deltamarin and ESL Shipping by Sinotrans & CSC Shipbuilding Industry Cooperation's Qingshan shipyard in China.

The first vessel is scheduled for delivery at the end of 2017 and the second in early 2018. They will primarily be used to carry raw materials for steel and energy industries in the Gulf of Bothnia and Baltic Sea.

## **HULL FORM**

### **FIRST MALS CRUISESHIP DELIVERED**

*AIDAprima*, the world's first cruise ship with Mitsubishi Heavy Industries' Air Lubrication System (MALS), was delivered from MHI's Nagasaki shipyard last month and is now heading towards Hamburg, where the 125,000gt vessel will be christened.

The christening will form part of the celebrations commemorating the 827<sup>th</sup> anniversary of the Port of Hamburg.

Shunichi Miyanaga, President and CEO MHI, commented: "We are proud to deliver *AIDAprima*, the first of a new generation of energy-efficient cruise ships superbly equipped to provide a fantastic cruising experience. Given the cutting-edge nature of the ship, construction was challenging but ultimately we built a cruise ship of the very highest quality, offering superior comfort and entertainment features for passengers. It provided us with key learning to enable a smoother construction process for future vessels - starting with *AIDAprima*'s sister ship."

MALS is MHI's proprietary technology developed to enhance fuel efficiency by covering the submerged hull with fine bubble, thus reducing frictional resistance between the ship hull and seawater as the ship cruises.



However, MALS is not the only groundbreaking technology employed. *AIDAprima* features podded propulsion, a LNG fuel supply system, a gas emissions treatment system and an air-conditioning system that saves on energy consumption by using waste heat.

### **DELTAMARIN TO DESIGN STENA LINE'S CHINESE ROPAXES**

Deltamarin secured a major contract last week to deliver a comprehensive engineering, procurement, construction and management (EPCM) package for four ro-pax ferry newbuilds to be built for Stena RoRo at China's AVIC Weihai Shipyard. It is thought the vessels will be the first ro-pax ferries to be built in China for a western owner.

Deltamarin design the vessels and provide project management services to support AVIC SHIP and AVIC Weihai Shipyard during the construction process. The Finnish naval architect and marine engineering firm's scope of supply includes approval design, support in procurement handling and detail design. Deltamarin Floating Construction will carry out the construction management in close co-operation with AVIC.

Deltamarin developed the design concept, in close collaboration with the owner, for operation on Stena Line's North European routes and to meet the latest rules and regulations for safety and environment. Special attention has been paid to the vessels' fuel efficiency as well as maximising cargo space.

The vessels will each have capacity for 1000 passengers and more than 3000m lane in a drive-through configuration. Main engines will be "gas ready", prepared to be fuelled by either methanol or LNG.

"We are proud to be involved in this high-performance next-generation ro-pax ferry construction in China. This will be the first time we combine the wide passenger vessel experience of Deltamarin Group with the best cost construction to satisfy the desires of a premium internationally-operating shipowner", said Deltamarin Managing Director Mr Mika Laurilehto.

### **WMJ REVIVES REDUNDANT RIGS WITH NEW VESSEL CONCEPT**

Texas-based engineering firm William Jacob Management is to complete the detailed engineering and design of a new vessel concept for Northport Marine.

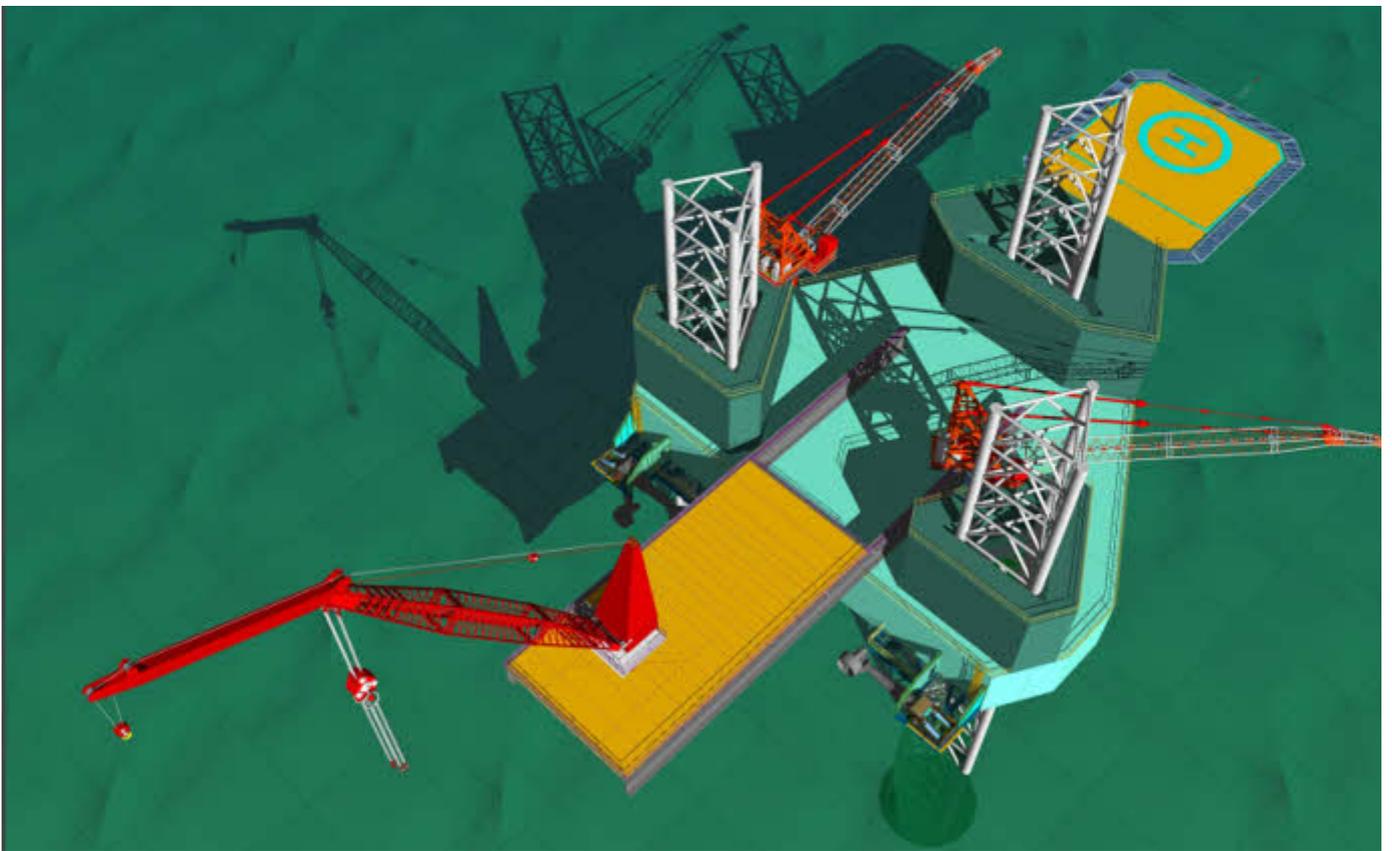
The mobile offshore support services vessel, the *MOSS V*, will be the first heavy-duty jack up drilling rig converted to a self-propelled vessel. Potential applications include rigless plug and abandonment (P&A), construction support, floatel, storm damage repair, decommissioning, wireline, workover, support of a skid off rig and maintenance.

WJM will provide the engineering design and construction management for the conversion and refit of a candidate vessel, several of which have been identified, said the company in a press statement.

By removing pre-existing drilling equipment from the top deck during the conversion, a 10,000ft<sup>2</sup> open deck serves to create a utility vessel that allows for the accommodation of a number of different services. The equipment below deck (pumps and tanks) is left in place, for potential use in P&A applications.

Typically, a standard jack-up rig is equipped with two or three cranes with limited capacity of only 10 to 30t. The *MOSS V* design adds a new heavy-duty 500t crane, which extends the vessel's capability to comfortably handle platform maintenance, coiled tubing offloading, the decommissioning of platforms and the rigless P&A of wells.

Michael Duffy, president, William Jacob Management, said: "In the current industry climate, an increasing number of plug and abandonment and decommissioning projects are coming online, and the *MOSS V* is currently the only vessel sufficiently equipped to fully serve this target [market]. For an extremely competitive day rate, the *MOSS V* offers a unique set of multi-functional characteristics, eliminating the need for clients to hire multiple expensive vessels to perform various tasks, and delivering significant time and cost savings offshore. The *MOSS V* is a self-propelled vessel, with all the advantages of a heavy, robust standard jack-up



drilling rig, but with the added design benefits of self-propulsion, 10,000ft<sup>2</sup> deck space and ability to undertake a wider variety of work in deeper water. Its versatility makes the *MOSS V* a one-stop shop for a variety of offshore requirements.”

The design also features a 2000ft<sup>2</sup> enclosed machine and welding shop and helideck and can accommodate living space for 85 persons, which means it can also jack up next to a platform and be used as a floatel.

## **CLASSIFICATION**

### **FIRST IRISL SHIPS UNDER DUAL RINA AND ACS CLASS**

The first two 15,000dwt general cargo ships owned by IRISL, a major shipping company in Iran, are under joint RINA and ACS classification. This dual classification is the result of a partnership signed with the Tehran-based ACS shortly after sanctions were lifted.

RINA Services’ marine classification in this area reflects Italy’s strong commitment to forging long-standing relationships with countries in the Middle East and now in Iran in particular.

“All classification societies are trying to enter the Iranian market. Our recent partnership with the ACS was a strategic move that has proved successful in expanding our local reach and classification expertise in the area,” said Andrea Di Bella, Area Manager, RINA Services in the Middle East.

RINA Services’ partnership with the ACS aims to support the company’s testing, inspection, classification and certification services in Iran in all four areas of its business: marine, energy, infrastructure and transport and business assurance.

A large number of IRISL’s trading routes are along the Far East, Middle East, Mediterranean and Europe. These are regions in which RINA has developed a very strong network and high level of expertise fostering future opportunities with IRISL, in Iran and other regions.

RINA Services currently has an overall fleet of over 5425 classed ships.

RINA opened an office in January in Tehran through which the Group will deliver its services to the oil & gas, power generation, infrastructure, railway and business assurance sectors. Over the next year RINA plans to further strengthen its presence in Iran and the Middle East, building on its growing reputation as it expands into new markets.

## **SEATRIALS**

### **OVATION DESIGN FAILS TO IMPROVE ON FUEL CONSUMPTION**

*Ovation of the Seas* left Meyer Werft last week for modification work at the Blohm+Voss yard in Hamburg before handover to Royal Caribbean International.

The 167,800gt vessel, the third in a series of new cruise giants for Royal Caribbean International, recently completed seatrials, including sound and vibration measurements and speed tests. However, following a second trial voyage, the decision was taken to replace the vessel’s propellers. For this third ship in the series, a



new design had been developed to further improve fuel consumption but this was not achieved so the shipyard and owner decided to revert back to the original design. Different propellers will now be fitted while the ship is in dock in Hamburg.

The crew and shipyard staff will then return to Bremerhaven for a very brief layover before handing the ship over to the owner. According to Meyer Werft plans are still in place to proceed with vessel handover ahead of schedule at the time of writing.

## **TRAINING**

### **CHEVRON ENGINEERS TO TRAIN WITH G-SIM LNG SIMULATOR**

The training subsidiary of French liquefied natural gas specialist GTT has received an order to supply its G-Sim LNG simulator software to Chevron.

The contract involves the development of a new LNG Carrier model based specifically on the new LNG vessels owned and operated by Chevron. The GTT Training G-Sim software will also interface with the engine room simulation equipment being provided to Chevron by L-3 DPA.

Used to provide hands-on, real-time training in the processes and procedures required LNG cargo related operations, G-Sim provides full simulation of all the systems on a vessel that are involved in the management and handling of the LNG cargo and maintaining the vessel in a safe condition.

In addition to the Chevron specific vessels, the instructors will also be able to select from 16 different configurations of LNG carrier, with the selection being based on tank capacity, containment system and propulsion system, to cater for future requirements.

### **GE'S DP SCHOOL ACCREDITED BY NI**

Continuous efforts to help increase marine industry safety standards for operators recently resulted in the endorsement of The Nautical Institute's (NI) accreditation for GE to conduct a dynamic positioning (DP) sea-time reduction (STR) course in its modern DP training centre in Houston.

Only 13 DP schools worldwide are accredited to provide STR courses.

The accreditation allows trainee DP operators (DPOs) to receive credit of 30 days of DP sea time when they complete five days of intensive training in the DP simulator. Using GE's advanced DP simulator, the company can provide

the trainees with a selection of scenarios that help prepare the DPOs for a multitude of possible situations that they may encounter when engaged in DP operations.

"Since the inauguration of the centre in 2005, we have continually worked to deliver a high-standard training syllabus for mariners globally. Our continuous efforts have been paying off over time, and after receiving a Class A certification from The Nautical Institute, we're proud to now receive the accreditation to provide STR Courses too. As the industry struggles to find competent manpower, GE is a leader when it comes to training the next generation of mariners," said Tim Schweikert, president and CEO of GE's Marine Solutions business.



## MODELLING

### BV PARTNERSHIP TO IMPROVE HYDRODYNAMIC EFFICIENCY

By Samantha Fisk

The recent announcement that French classification society Bureau Veritas (BV) has created an international research partnership with Ecole Centrale de Nantes (ECN) is bound to benefit the evolution of the energy efficient ship, given the aim of the partnership is to improve the safety and hydrodynamic performance of future vessels.

The ambitious research programme, which also includes HydrOcean, who will provide CFD-optimisation services and Nextflow software solutions, could open up a realm of design possibilities and provide better understanding of how vessels behave in the marine environment.

The classification society believes the industry must be transformed to remain competitive and evolve the maritime territory with untapped capabilities. Ships must be more reliable and consume less energy. This is where the HydrOcean and Nextflow Software comes in. By using the software, a ship's overall safety can be achieved, according to BV. "Numerical simulation of proposed new hull structures for ships and offshore units can be rigorously tested against expected environmental conditions and fatigue simulated in a way not possible until now."

The combination of the four partners in the Hydrodynamics and Marine Structures Chair will make possible the emergence of technological innovations for the conception, design, performance and security of vessels, compliance with the environmental and safety standards, and lower fuel consumption level.

The scientific and technical program, under the direction of David Le Touzé, professor at Centrale Nantes and newly appointed Chair holder, will combine digital simulation and hydrodynamic experiments to achieve scientific and technical advances in experimental and numerical modelling of hydrodynamic problems and structure across the maritime fields.

The development of numerical simulation tools hydrodynamic flow and hydro-structural responses will be based on tools developed at the Ecole Centrale de Nantes and Bureau Veritas, and/or open source software. The advantage of digital simulation on direct experimentation is expected to save time and speed. Hydrodynamic tests at the Ecole Centrale de Nantes, with the use of a towing tank and a large ocean engineering basin, will allow experiments from optimised models and digital simulation, on waves of 10 to 15m, in water depths ranging from coastal to deep offshore. Structural safety issues include the effects of green water on marine structures, the hydro-structural response of hull girders and slamming, torque, low frequency phenomena of irregular waves and damping coefficients.

## NEWBUILDS ORDERED

**CRUISE:** Fincantieri has inked an agreement with Carnival Corporation for five next-generation passenger ships in a deal worth €3 billion. Two of the new ships will be built for the Costa Crociere brand Costa Asia, other two for Princess Cruises and one for P&O Cruises Australia. Fincantieri also signed a contract with Norwegian Cruise Line Holdings (NCLH) for the construction of the second ultra-luxury cruise ship for the Regent Seven Seas Cruises brand.

**EXPEDITION:** Ponant has ordered four new ice-class expedition ships from VARD with delivery of the first one expected in 2018. The four newcomers will be 128m in length with 92 staterooms, and have a crew of 110.

**BULK:** Chinese shipping companies Cosco Group, China Merchants Group and ICBC Financial Leasing Co are reported to have placed orders for 30 giant Valemax vessels worth a combined \$2.5 billion

**NAVAL:** Austal won a contract last week to build an additional Littoral Combat Ship for U.S. Navy. LCS 26 will be the eleventh Independence-variant Littoral Combat Ships built by Austal as prime contractor, with the U.S. Navy exercising an option in addition to Austal's existing 10-vessel block-buy contract. Funding for LCS 26 has been confirmed by the US Navy as not to exceed the congressional cost cap of US\$564 million increasing Austal's order book to approximately A\$3 billion.

**TUGS:** Svitzer signed a contract with the Damen Shipyards Group for four ATD 2412 tugs as part of the salvors ongoing fleet renewal programme. All four tugs are being built at Damen Song Cam Shipyard in Vietnam.

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## COMPANY NEWS

### SCHOTTEL INTENSIFIES CUSTOMER SUPPORT SERVICES

German propulsion systems supplier Schottel has reorganised its service interfaces, combining its after-sales service and system technology units to optimise its customer service offering.

“Our objective is to provide even more intensive support to our international customers and service subsidiaries. They will now be able to process projects and customer requirements even more directly. We are presenting ‘one face to the customer’ with exceptionally close technical networking of our employees,” explained Stefan Buch, the head of the new Customer Support and System Technology division.

“This organisational streamlining enables us to establish shorter communication channels and concentrate our know-how. For the customer, this will manifest itself through faster communication, shorter response times and greater customer proximity,” he added.

With its headquarters in Spay/Rhine, Schottel is one of the world’s leading manufacturers of propulsion and steering systems for ships and offshore applications. Founded in 1921, the company designs and manufactures azimuth propulsion and manoeuvring systems, complete propulsion systems with power ratings of up to 30MW, and steering systems for vessels of all sizes and types.

### PSM INSTRUMENTATION AND SCANJET JOIN FORCES

PSM Instrumentation and Scanjet have joined forces in a strategic investment to offer a more comprehensive product range that fulfils the concept of Intelligent Tank Management.

As partners, UK-based PSM, a manufacturer of marine tank gauging systems, and Sweden’s Scanjet, the tank cleaning, venting, monitoring and control solutions provider, will be able to provide its marine solutions from a single source.

John Bullivant, Managing Director of PSM Instrumentation, said: “PSM has enjoyed a wonderful 30 years as an independent company. We now feel that, for the benefit of our customers and staff, we need a strong partner to take us to the next level. Scanjet is the perfect choice because of the many synergies between the two companies.”

Magnus Wallin, CEO of Scanjet AB, added: “Scanjet is joining forces with PSM to provide customers with new products that broaden and enhance our portfolio, allowing us to offer the full range of intelligent marine tank management solutions demanded by our major global shipbuilding customers. This supports our strategic growth plan by investing in product development and company acquisition.”

### NEW SERVICE CENTRES FOR ABB TURBOCHARGERS

ABB Turbocharging has opened new service locations in Amman (Jordan), and Montevideo (Uruguay). Service Stations were also upgraded in Australia; and facilities enhanced for customers in China, Japan, South Korea, Turkey, and the USA. The investments are part of ABB Turbocharging’s strategy to fine-tune its service capability in line with customers’ needs.

### CHEVRON AND GAZPROMNEFT COOPERATE ON MARINE BLENDS

Chevron Marine Lubricants signed a cooperation agreement last week with Russia’s Gazpromneft Lubricants to improve its supply network and provide a greater choice of marine lubricants for ship operators and managers.

Under the agreement, Gazpromneft Lubricants will manufacture Chevron-branded marine lubricants at its blending plants at Omsk and Fryazino in the Russian Federation, giving river craft operators on the inland waterways network in Russia access to Chevron’s line of marine lubricants.

Gazpromneft Lubricants has opened a dedicated marine lubricants sales office in St Petersburg from where it will service customers based throughout Russia and the Ukraine.



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Edited by: Patrik Wheeler  
Contributor: Samantha Fisk  
Publisher: Seaborne Communications Ltd  
Email: [mem@seabornecomms.com](mailto:mem@seabornecomms.com)  
Web: [www.seabornecomms.com](http://www.seabornecomms.com)

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